

(PCT Rule 61.2)

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Date of mailing (day/month/year)

06 April 1999 (06.04.99)

International application No.

PCT/US98/14091

Applicant's or agent's file reference

CM1519Q/VJ

International filing date (day/month/year)

08 July 1998 (08.07.98)

Priority date (day/month/year)

08 July 1997 (08.07.97)

Applicant

ISELE, Olaf, Erik, Alexander et al

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

04 January 1999 (04.01.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Sean Taylor

09/446550

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|---|---|--|
| Applicant's or agent's file reference CM1519Q/VJ | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/US 98/ 14091 | International filing date (day/month/year) 08/07/1998 | (Earliest) Priority Date (day/month/year) 08/07/1997 |
| Applicant THE PROCTER & GAMBLE COMPANY et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).
2. ☐ Unity of invention is lacking (see Box II).
3. ☐ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
 - ☐ filed with the international application.
 - ☐ furnished by the applicant separately from the international application,
 - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - ☐ Transcribed by this Authority
4. With regard to the title, ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - ☒ the text is approved as submitted by the applicant
 - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is:
Figure No. 1 ☒ as suggested by the applicant. ☐ None of the figures.
☐ because the applicant failed to suggest a figure.
☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International Application No

PC1/US 98/14091

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61F13/15

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 4 341 216 A (OBENOUR MARY C) 27 July 1982 see column 1, line 61 - column 2, line 10; figures | 1, 2, 5, 14, 15 |
| A | see column 5, line 5 - line 8 see column 8, line 61 - column 9, line 22 see column 8, line 9 - line 13; examples --- | 3, 11 |
| X | US 4 713 069 A (WANG KENNETH Y ET AL) 15 December 1987 see column 8, line 37 - line 39; claims 1, 9, 13, 14; figures | 1-6, 11 |
| A | see column 8, line 49 - line 50 see column 8, line 61 - line 63 see column 9, line 3 - line 17 see column 10, line 10 - line 15 --- -/-- | 7, 12-14 |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

12 October 1998

Date of mailing of the international search report

21/10/1998

Name and mailing address of the ISA

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Authorized officer

Mirza, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/14091

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | WO 97 00056 A (PROCTER & GAMBLE) 3 January 1997 see page 8, line 7 - line 19; figures 3,4 | 1,2,11, 12,14 |
| A | see page 9, line 16 - line 26; claim 1 --- | 16,17 |
| X | US 5 571 096 A (DOBRIN GEORGE C ET AL) 5 November 1996 see column 6, line 30 - line 44; claims 1,2,14; figures | 1,11 |
| A | see column 9, line 43 - column 10, line 58 --- | 2 |
| X | WO 90 04375 A (MCNEIL PPC INC) 3 May 1990 see page 8, line 8 - page 9, line 29; claims 4,17; figure 1 --- | 1 |
| X | GB 2 171 915 A (PROCTER & GAMBLE) 10 September 1986 see page 2, line 64 - line 101; claims 1,9,10 --- | 1 |
| A | GB 2 290 052 A (KIMBERLY CLARK CO) 13 December 1995 see page 9, line 6 - page 10, line 1; claims 1,4,12 see page 10, line 32 - page 11, line 23 --- | 7-16 |
| A | GB 2 295 322 A (KIMBERLY CLARK CO) 29 May 1996 see page 8, line 4 - line 7; claims 1,6,7,11,24,25 see page 7, line 14 - line 24 --- | 1,3-6, 11,15 |
| A | GB 2 296 216 A (KIMBERLY CLARK CO) 26 June 1996 see page 5, line 15 - line 16; examples see page 8, line 13 - line 32; claims 7,10,12-15,17 --- | 3,4, 13-15 |
| A | WO 91 12125 A (CLOPAY CORP) 22 August 1991 see page 22, line 2 - page 23, line 17; claims 1,4 --- | 16,19 |
| A | US 4 806 300 A (WALTON RICHARD R ET AL) 21 February 1989 see column 2, line 37 - column 3, line 5; claim 1; figures see column 3, line 38 - line 39 ----- | 16,18,19 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/14091

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Information on patent family members

International Application No

PCT/US 98/14091

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/14091

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| | | |
|--|-----------|--|
| (51) International Patent Classification ⁶: A61F 13/15 | A1 | (11) International Publication Number: WO 99/02114 (43) International Publication Date: 21 January 1999 (21.01.99) |
| <p>(21) International Application Number: PCT/US98/14091</p> <p>(22) International Filing Date: 8 July 1998 (08.07.98)</p> <p>(30) Priority Data: 97111501.9 8 July 1997 (08.07.97) EP</p> <p>(71) Applicant (for all designated States except US): THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): ISELE, Olaf, Erik, Alexander [DE/DE]; Konigsteiner Strasse 10, D-61389 Schmittent-Oberreifenberg (DE). BERUDA, Holger [DE/DE]; Am Wolfes 7, D-65779 Kelkheim-Ruppertshain (DE).</p> <p>(74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).</p> | | <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> |
| <p>(54) Title: DISPOSABLE ABSORBENT ARTICLES WITH CLOTHLIKE FEEL BACKSHEET HAVING ZONED BREATHABILITY AND PROCESS FOR MAKING SUCH BACKSHEETS</p> | | |
| <p>(57) Abstract</p> <p>A disposable absorbent article comprising a breathable polymeric film at least partially combined with a fibrous material to a laminated for being used as backsheet material with zones having different breathability.</p> <div data-bbox="868 1165 1469 1974"> <p>The drawing shows a cross-sectional view of a disposable absorbent article. It features a top layer (34) with a pattern of small circles (35) and a bottom layer (30) with a pattern of small circles (36). A central layer (24) is shown with a pattern of small circles (26). The article is divided into three vertical sections by dashed lines. The left section is labeled 70, the middle section 68, and the right section 70. The top layer is labeled 50, the middle layer 34, and the bottom layer 30. The central layer is labeled 24. The article is shown with a top edge (36,40,46) and a bottom edge (36,40,48). The drawing includes various reference numerals indicating different components and layers.</p> </div> | | |

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REC'D 30 JUL 1999

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

19

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|---|---|--|
| Applicant's or agent's file reference CM1519Q/VJ | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US98/14091 | International filing date (day/month/year) 08/07/1998 | Priority date (day/month/year) 08/07/1997 |
| International Patent Classification (IPC) or national classification and IPC A61F13/15 | | |
| Applicant THE PROCTER & GAMBLE COMPANY et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 9 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 04/01/1999 | Date of completion of this report 28. 07. 99 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465 | Authorized officer De Crignis, G Telephone No. (+49-89) 2399 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US98/14091

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-19 as originally filed

Claims, No.:

1-20 as received on 02/07/1999 with letter of 01/07/1999

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US98/14091

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|------|--------|----------------|
| Novelty (N) | Yes: | Claims | 5 - 9, 11 - 19 |
| | No: | Claims | 1 - 4, 10, 20 |
| Inventive step (IS) | Yes: | Claims | 15 - 19 |
| | No: | Claims | 1 - 14, 20 |
| Industrial applicability (IA) | Yes: | Claims | 1 - 20 |
| | No: | Claims | |

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Concerning Section VIII

- 1) The application does not meet the requirements of Article 6 PCT because Claims 1, 3, 4, 20 are not clear and precise and not supported by the description.

In claim 1 the basis for "and further comprising a fibrous layer positioned towards the outer side of the article during its intended use" should be on page 10 line 19 - 21. However, in this passage the feature is not mandatory. Hence, the description should be amended to be in consistency with the claim.

In claim 1 the feature "and wherein said polymeric film layer comprises a polymeric matrix and particulate filler material embedded in said matrix" does not appear to be clear and complete. This feature is understood to encompass also the ruptures which are made in the film layer in order to arrive at a certain microporosity in order to have a vapour or gas permeable film. Therefore, these ruptures should be present in the backsheet material according to claim 1 otherwise an essential feature is missing. This is supported by the definition of the process claim 15 where a permanent deformation and different vapour and gas permeability is considered as an essential technical feature. Therefore, claims 1 and 15 are not in consistency.

In claim 20 a material is claimed for use as a backsheet material in absorbent articles made by a process according to any of claims 15 to 19. However, it is not clear, how such a product can be differentiated from an article made by another process. Therefore, the requirements of Article 6 PCT are not fulfilled.

- 2) The amendments filed with the letter dated 1.7.99 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following:

- 1) In claim 1 the basis for "at least one polymeric film layer is a unitary layer extending both into the core backsheet material and the chassis backsheet material" should be on page 3 line 1 to 4. However, this paragraph is worded that "at least one polymeric film layer of the core backsheet and the chassis backsheet is unitary over both regions". Therefore,

this wording should have been chosen.

ii) The subject-matter of claims 3 and 4 refers to the MVTR in the core region. However, in claims 3 and 4 as originally filed reference was made to "the backsheet material in the core region". Therefore, this term should have been chosen.

iii) The subject-matter of claim 15 is considered to be identical to the subject-matter of claim 16 as originally filed. However the wording "a laminate for being used in a product" has been in the claim as originally filed "a laminate for being used as a backsheet in a product". Therefore, the scope would be extended by the amended wording and the Applicant should reinsert the missing term "as a backsheet" into claim 15.

Concerning Section V:

The present application satisfies the criterion set forth in Article 33 PCT because the subject-matter of Claim 1, 2, 3, 4, 10 and 20 is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT) and claims 1 to 10 do not involve an inventive step.

US-A-4,713,069 (D2) which is considered to represent the most pertinent state of the art, with respect to claim 1 discloses a baffle suitable for use in a feminine pad or napkin having zoned water vapour permeability. Reference to microporous films in the laminate is made. However, according to the description on column 10 lines 16 ff in D2, the term microporous is not used in the same sense as it has been used in the prior art. Furthermore, there is a reference to fillers as additives into the polyvinylalcohol (column 13 line 63), however, no particular reference to particulate fillers is disclosed.

D2 refers to the water vapour permeability being equal to or higher in the front and rear zone than in the central zone (see column 8 lines 4 - 39).

Thus, the subject-matter claimed in D2 and the present application is worded identical even if it shall not be the same. However, for the moment being the wording has to be taken as such and thus, D2 discloses all subject-matter of claim 1 and thus, the subject-matter of claim 1 is not novel.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US98/14091

Independent claim 20 refers to a material for use as a backsheet material and in the characterising portion no particulate filler material embedded in the matrix of the polymer film layer is mentioned. Thus, document D2 discloses all subject-matter of claim 20 and hence, the subject-matter of claim 20 is not novel.

Other prior art documents:

US-A-5,571,096 (D4) discloses a backsheet formed of a laminate of one liquid impervious vapour permeable film 26 (column 6 line 35 to 65). The backsheet apertured zones 80 are defined by an aperture density of up to 10,000 apertures per square inch (column 8 line 20 - 26). Such a number of apertures can only be obtained if the apertures are very very small and thus the term "microapertures" would also be justified. It is not disclosed how this porosity is made, however, the article appears to be the same as claimed for in claim 1.

Document US-A-4,341,216 (D1) discloses an absorbent article with a backsheet which is a combination of two elements, an inner panel which can be constructed from any liquid impermeable material and an outer sheet which is provided with regions which are impermeable and with regions which are vapour pervious but relatively liquid impervious. However, no reference to a polymeric film layer comprising a polymeric matrix and particulate filler material is disclosed.

WO-A- 97/00056 (D3) discloses a backsheet formed of the inner layer 110 and the outer layer 112 which can be laminated together (page 9 fourth paragraph). The film material of the inner layer can be vapour permeable (page 8 second paragraph). The feature that the core backsheet material and the chassis backsheet material exhibit different degrees of breathability is also given by the fact, that, according to page 10 first paragraph "the outer layer is positioned within the central region and extends from at least the rear waist region to the front waist region. Preferably, the outer layer forms a portion of the end edge in the rear and front waist region."

Thus, the difference between D3 and the present application is the fact that the polymeric film layer comprises a polymeric matrix and particulate filler material embedded in said matrix. D3 is silent to the polymeric matrix having an embedded particulate filler material. Therefore, it

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is not clear, whether this subject-matter is fulfilled by D3 or not.

WO-A-90/04375 (D5) discloses a backsheet formed of a backing layer with an associated moisture-imperious barrier means which has a surface area less than the surface area of said backing layer. No indication to microapertures is present, however, on page 8 line 14 and page 9 line 9, the moisture pervious and breathable material is disclosed. Such the nature of the apertures can only be in the way of micropores, otherwise the material would be liquid-permeable.

GB-A-2,171,915 (D6) discloses a backsheet formed of an outer layer and a barrier layer. The barrier layer is substantially longitudinally coterminous with the absorbent article and is of a relatively smaller transverse width (claim 1) and thus there will be different degree of breathability in the core backsheet and the chassis backsheet material. The film layer can be any one known in the art and therefore, no limitation to the use of available materials is given.

Inventive step

Document D2 is not clear to the extent that the filler is particulate. Thus, if there should be any difference to document D2 than it is that the filler material is particulate. However, this is well-known in the art and cannot involve an inventive step.

In the description on page 9 it is disclosed that conventional examples for moisture vapour permeable films are so called microporous films which can be provided commercially. (page 9 line 10 - 20). It is also disclosed in the following that these films are formed by embedding filler particles into the matrix and subsequent mechanical treatment. Examples of commercially available films are given (page 9 lines 22 - 35).

Furthermore, it is stated on page 10 line 19 to 21 that such films are often combined with fibrous webs, such as non-wovens, which will be positioned towards the outer side of the article.

Hence, all the features which now establish the subject-matter of the characterising part of claim 1 are explicitly disclosed as being obvious in the art. The question what shall be the invention of the present application can perhaps be solved by the description on page 11

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second paragraph. There it is stated that a key element of the present invention is to combine the film and the fibrous material into a composite before the film is "activated" to become breathable.

Therefore, it is suggested to claim this subject-matter as done in claim 15. Since the scope of protection of such a process claim is considered to cover all products directly obtained by such a process, claims 15 to 20 would cover the scope of the invention.

For claims 1 to 14 it is not clear how such absorbent articles differ from articles made by another process, for example from D2 or D4. Therefore, claims 1 to 14 should have been deleted.

Dependent claims 2 to 14 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

The subject-matter of claim 2 is known from D2, see column 8 line 44 to 66.

The subject-matter of claims 3 and 4 is known from D2, see column 8 line 21 to 23.

The subject-matter of claims 5 and 6 appears to be obvious from the disclosure of D2. When the areas of the baffle on each side of the central zone shall have a higher water vapour permeability relative to that of the central zone, the difference should always be remarkable. Otherwise the action does not make sense. Therefore, a difference of 20 % or of 500 g/24 h/m² appears to be the minimal difference. And thus an inventive step cannot be seen in this minimal difference.

The subject-matter of claim 7 refers to the filler material and appears to be well-known in the art.

The subject-matter of claims 8 and 9 refers to the basis weight of the material and is well-known in the art.

The subject-matter of claim 10 refers to the fibrous layer being a non-woven web which is known from document D2, see column 7 line 45/46.

The subject-matter of claims 11 to 13 refers to the method by which the laminate is formed. All methods mentioned are well-known in the art.

The subject-matter of claim 14 refers to the nature of the article and such articles are well-known for the intended use of a backsheet.

Concerning Section VII:

To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 to D6 should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

The US Patent Application Serial numbers should have been changed to the publication numbers.

The references to documents being incorporated by reference should be deleted. If it is felt that the disclosure of these documents is necessary for an understanding of the present invention appropriate expressis verbis description should be introduced.

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Int'l or Application No

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61F13/15

According to International Patent Classification(IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 4 341 216 A (OBENOUR MARY C) 27 July 1982 see column 1, line 61 - column 2, line 10; figures | 1,2,5, 14,15 |
| A | see column 5, line 5 - line 8 see column 8, line 61 - column 9, line 22 see column 8, line 9 - line 13; examples --- | 3,11 |
| X | US 4 713 069 A (WANG KENNETH Y ET AL) 15 December 1987 see column 8, line 37 - line 39; claims 1,9,13,14; figures | 1-6,11 |
| A | see column 8, line 49 - line 50 see column 8, line 61 - line 63 see column 9, line 3 - line 17 see column 10, line 10 - line 15 --- -/-- | 7,12-14 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

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PCT/US 98/14091

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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Inventor's Application No

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WHAT IS CLAIMED IS:

1. Absorbent article comprising
an absorbent core defining a core region ;
5 a chassis region surrounding said core region;
said absorbent core being interposed between a backsheet, which is
impermeable to liquids, and a topsheet, which is permeable to
liquids;
said backsheet extending over the core region and at least parts of
10 the chassis region ,
said backsheet further comprising a fibrous layer at least in the core
region;
characterised in that
the backsheet comprises film or film-like layer which is permeable to
15 vapours or gases which is a unitary layer extending both into the
core region and at least into parts of the chassis region,
whereby the backsheet has a higher MVTR value in these parts of
the chassis region, which comprise said film or film-like layer, than
the backsheet in the core region, which comprise said film or film-
20 like layer and the fibrous layer.
2. An absorbent article according to claim 1, wherein said film or film-
like layer is wider than said fibrous layer.
- 25 3. Absorbent article according to claim 1 or 2
further characterised in that
the backsheet material in the core region has an MVTR of at least
500 g/24hr/m².
- 30 4. Absorbent article according to claim 3
further characterised in that
the backsheet material in the core region has a MVTR of at least
1500 g/24hr/m².

5. Absorbent article according to any of claims 1 to 4
further characterised in that
the MVTR values of the backsheet in the chassis region are at least
20% higher than the MVTR values of the backsheet in the cor
region.
6. Absorbent article according to any of claims 1 to 4
further characterised in that
the MVTR values of the backsheet in the chassis region are at least
500 g/24hr/m² higher than the MVTR values of the backsheet in the
core region.
7. Absorbent article according to any of the preceding claims,
whereby
said film or film-like layer comprises a polymeric matrix and
particulate filler material embedded in said matrix.
8. An absorbent article according to claim 7, whereby
the filler material is calcium carbonate.
9. An absorbent article according to any of the preceding claims,
whereby said film or film-like layer in the chassis region has a basis
weight of less than 50 gsm.
10. An absorbent article according to any of the preceding claims,
whereby said backsheet has a basis weight of less than 70 gsm
where it comprises said film or film-like layer and said fibrous layer.
11. An absorbent article according to any of the preceding claims,
whereby said fibrous layer is a non-woven web.
12. An absorbent article according to any of the preceding claims,
whereby the film or film-like layer and the fibrous layer are combined
by heat or melt bonding.

13. An absorbent article according to any of the preceding claims, whereby the film or film-like layer and the fibrous layer are combined by extrusion coating.
- 5 14. An absorbent article according to any of the preceding claims, whereby the film or film-like layer and the fibrous layer are combined by adhesive.
- 10 15. Absorbent article according to any of the preceding claims, whereby the article is a baby diaper or an adult incontinence article.
16. A process for inducing zoned vapour or gas permeability into a laminate for being used as a backsheet in a product according to any of the preceding claims, comprising the steps of
- 15 - providing a polymeric film comprising particulate filler embedded in the polymeric matrix;
- providing a fibrous web which has equal width or is narrower than the film in cross-machine direction;
- combining the film and the web to form a laminate;
- 20 - stretching the laminated and the non-laminated film zones by feeding the film and laminate zones between a pair of opposed pressure applicators comprising three-dimensional surfaces which are complementary to one another; and
- 25 - subjecting the portions of said web located between said opposed pressure applicators to incremental cross dimensional elongation by causing said opposed three-dimensional surfaces of said pressure applicators mesh with one another,
- 30 whereby said laminated and non-laminated film zones are at least partially permanently deformed and different vapour gas permeability is induced in various zones thereof.
17. A process according to claim 16 whereby the fibrous web is narrower than the polymeric film in CD direction.
- 35

18. A process according to claim 16 or 17, further comprising the step of heat treating the web after having subjected the web to said incremental CD elongation step.
- 5 19. A process according to any of claims 16 to 18, whereby the intermeshing between the two pressure applicator rolls is essentially constant throughout the width of the laminated and non-laminated zones.
- 10 20. A process according to claim 16, whereby the intermeshing between the two pressure applicators is different throughout various zones.